

Appendix E, Chapter 11

Scenario Development Process

11.0 Scenario Development Process

The preferred scenario was developed through a collaborative process with representative stakeholders based on:

- ✓ Recovery criteria defined by the NOAA Fisheries Willamette/Lower Columbia TRT;
- ✓ Biological significance of each population; and
- ✓ Constraints and opportunities for recovery.

As noted in Section 5.1, TRT recovery criteria define ESU viability based on: 1) a high probability of persistence of each species, life history type, and ecological zone stratum, 2) at least two population per strata at high viability with a strata average of moderate, 3) representative core and legacy populations as well as catastrophic risks considered, 4) non-deterioration of any population until ESU recovery is assured, and 5) higher levels of recovery in more populations because not all attempts will be successful. Biological significance refers to current status, potential productivity, and genetic heritage. Biologically-ideal candidates for recovery would be currently productive, have potential for significant improvements in productivity, and would be representative of the historical population. Thus, a population close to viability that is a genetic legacy and has a high potential for increased productivity would have high biological significance. Conversely, a population far from viable that is not a genetic legacy and has a low productivity increase potential would have low biological significance. An index of biological significance was developed to help group populations based on these features. These categories informed further considerations of population priorities in the recovery scenario. Biological significance results are detailed in Technical Appendix 1 and methods in Technical Appendix 5.

The ease of recovery was identified based on a qualitative comparison of constraints, costs, and opportunities associated among populations. This involved a collaborative process in a series of Scenario Evaluation Team (SET) workshops held in November 2003. Scenario workshops were held in each stratum to assist in scoping recovery scenarios. The Scenario Evaluation Teams (SETs) included fish and habitat experts, policy staff from state and federal agencies, local elected officials, community leaders, timber company representatives, and citizens. Using the biological significance or potential ratings and information on fish population status and factors limiting recovery, the SETs discussed the potential opportunities and constraints for recovering each population in a stratum. The discussions focused on possible technical, legal, social, cultural, and economic considerations associated with recovery. Based on this discussion, the SETs rated the relative ease of recovering each population. It should be noted that ratings of the relative ease of recovery should not be interpreted as indicating whether a recovery of a population is feasible. Rather the ratings only indicate what the SET believed to be the ease of recovering one population relative to others of the same species.

A “Minimum Action Recovery Scenario” (MARS) was developed based on the TRT recovery criteria (with the exception of risk reduction measures), biological significance, and feasibility information (Table 1). As the title suggests, this scenario identified one example of the minimum improvement in population viability needed to satisfy TRT criteria of two populations at high viability and a strata average of moderate. Preference was given to populations that are healthiest or most viable and offer the greatest potential for increased productivity and abundance. Preference was given to the populations identified by the SETs as having the relative greatest ease of recovery. (Ease includes social/economic, legal, technical and cost considerations.) Preference was also given to watersheds where recovery efforts provide multi-

species benefits wherever possible. Inherent in this definition is the presumption that the MARS would also minimize the scope, effort, and cost of recovery, but not the risk of failure. The MARS scenario assumed that all recovery targets for viability are feasible and could be achieved.

MARS served as the starting point for efforts to develop a final recovery scenario. MARS did not include adjustments for the potential risk of failing to meet viability targets for one or more of the selected populations. Nor, did MARS take into consideration major technical impediments to recovery such as the potential difficulty of establishing a viable chum population above Bonneville Dam. Further, the scenario would not necessarily achieve the recovery planning goal of “healthy, harvestable” population levels. “Healthy, harvestable” levels would not only achieve viability, but also provide for the additional productivity and abundance necessary to support harvest increases and other indirect utilization of fish resources, such as hydroelectric generation and urban and economic development.

A Working Scenario was developed as a refinement of MARS that included additional populations or improvement increments to meet TRT risk reduction criteria, balance risks where prospects for recovery of some strata was highly uncertain, and provide harvest opportunities. The Working Scenario builds upon MARS by adjusting population recovery goals to better reflect biological feasibility and to reduce the overall risk of failing to achieve recovery goals. For example, improving chum populations in the Gorge Strata to a high viability level may not be realistically feasible because of inundation of tributary habitat above Bonneville Dam and the difficulty chum have in passing significant barriers, such as dams. This is not to say that recovery will not be attempted but rather that success will be uncertain given the continued existence of Bonneville Dam. In such cases, the Working Scenario compensates for these deviations by proposing higher recovery levels for other populations. These compensation measures are intended to achieve an equivalent or better probability of ESU viability compared to those specified by the TRT criteria.

The Working Scenario represents the second of a three step process to develop a recovery scenario defining the recovery goals for lower Columbia salmon and steelhead recovery. The third and final step involved further review and adjustments to define a “preferred” scenario that would be technically sound and balanced.

Table 1. Alternative to preferred scenario. Summary of primary (P), contributing (C), and stabilizing (S) populations for each subbasin and population as identified in the Minimum Action Recovery Scenario (MARS) upon which the working scenario is based. X refers to subset of larger population. Primary populations are generally proposed for improvement to high or very high levels of viability, contributing populations to medium levels, and stabilizing populations maintained no lower than current levels. Populations where large impediments make recovery prospects highly uncertain are denoted by ‘!’. Dashes indicate species is not present. Oregon populations are denoted with ‘O’.

MINIMUM ACTION RECOVERY SCENARIO (NOT SELECTED - DOES NOT ADDRESS RISK OR FEASIBILITY)								
		Fall Chinook (tule)	Fall Chinook (bright)	Spring Chinook k	Chum	Winter steelhead	Summer steelhead	Coho ¹
COAST	Grays/Chinook	P	--	--	P	P ¹	--	P
	Elochoman/Skamokawa	P	--	--	P	P ¹	--	P
	Mill/Abernathy/Germany	C	--	--	C	C ¹	--	C
	Youngs Bay	O	--	--	O	O ¹	--	O
	Big Creek	O	--	--	O	O ¹	--	O
	Clatskanie	O	--	--	O	O ¹	--	O
	Scappoose	O	--	--	O	O ¹	--	O
CASCADE	Lower Cowlitz	C	--	--	C	C	--	P
	Upper Cowlitz	S	--	P!	--	C	--	C
	Cispus	--	--	P!	--	C	--	C
	Tilton	--	--	S	--	C	--	C
	SF Toutle	X	--	S	X	P	--	C
	NF Toutle	S	--	--	X	C	--	P
	Coweeman	P	--	--	X	C	--	C
	Kalama	C	--	P	C	P	P	S
	Lewis (NF)	X	P	P!	X	C	S	C
	EF Lewis	P	--	--	P	P	P	P
	Salmon	X	--	--	S	S	--	S
	Washougal	C	--	--	P	C	P	C
	Sandy	O	O	O	O	--	--	O
	Clackamas	O	--	--	O	--	--	O
GORGE	Lower Gorge	P!	--	--	P	P	--	P
	Upper Gorge	S	--	--	P!	S	P	P
	White Salmon	P!	--	P!	--	--	--	C
	Hood	O	--	O	--	--	O	--

¹ Not listed under U.S. Endangered Species Act.